BOOK REVIEWS

ANDREW PARKER. 2003. **In the Blink of an Eye**. (ISBN 0-465-05438-2 pbk.). Basic Books, 387 Park Avenue S., New York, N.Y. 10016, U.S.A. (Orders: 800-255-1514 or special.markets@perseusbooks.com). $15.00, 316 pp., b/w figures, index, 5" × 8".

In the new book *In The Blink Of An Eye*, author Andrew Parker puts a new spin on why animals first developed body armor during the Cambrian era. Parker contends that the discernable and sudden development of hard body coverings about 543 million years ago occurred to take advantage of the simultaneous development of higher-order vision in some animals. It was useful in attracting mates, and fighting off enemies, and being an effective predator.

This book takes the reader on an interesting expedition, through numerous fossil beds and to examine creatures living today throughout the world to discover the role of color and light in the evolution of Cambrian-era organisms. Parker presents a powerful and evidence-packed argument suggesting the cause of the Cambrian explosion, the sudden formation of body coverings, armament and distinct shapes around 543 million years ago, as the onset of organisms producing true vision and the ability to pursue prey.

The opening chapters present a well-organized mini "history of life" book and discussion of how fossils are investigated to give researchers clues on the appearance of and the living environment of those fossil organisms. These introductory chapters are helpful for the reader to get a good understanding of the argument about to be discussed. Following the background chapters, a good deal of information and numerous interesting examples are presented on the importance of visual appearance and behavior of various creatures as a response to light. For instance, examples included multilayer reflectors of Messel fossil beetles and Hercules beetles that alter the color of their appearance as humidity conditions change within layers of their body. Adaptations discussed included pigments, structural colors (such as iridescent film on wings), natural liquid crystals, diffraction, reflection layers and bioluminescence, all of which cause specific visual appearances. The uses of these visual appearances include camouflage, warning coloration, defense, and mating attractants. Information and examples presented included both fossil and extant organism evidence. Many of the adaptations discussed can only be seen if light is present. Therefore, many of the color, shape and behavior adaptations presented give clues as to the environment an organism could be found.

Vision as the cause of the Cambrian explosion is supported by evidence of the potential evolution of the eye in a short period of time (geologically speaking), and the ability of organisms to see their environment and more importantly (their) prey. It was determined possible for true eyes, eyes which not only vaguely perceive light and darkness, but form a true visual image in which the organism can "see" its surroundings, could evolve over less than half a million years. In addition, the strongest evidence for the author's theory is the occurrence of soft-bodied trilobites with no eyes in the Pre-Cambrian, then the abundance of trilobites with eyes and body armor in the Cambrian. The development of the first true eyes was followed by a rapid evolution of body color, body structure and behavior; all of these increased the capacity to be a predator and the avoidance of becoming prey through the formation of body armor and deterrents such as spines. The author does leave the reader with a parting question: "What prompted the development of the eye in the first place?"

Andrew Parker has presented a well-organized argument for vision as a trigger for the Cambrian explosion. He managed to explain the theory in a logical pattern while using both an educational and entertaining writing style. However, because each chapter entails so many details, I recommend you read each chapter beginning to end nonstop; doing so helps keep the ideas together.

One small complaint is the occasional reference to image plates that are not in the book. These plates would have enhanced the understanding of the information presented. This book is recommended for those interested in the Cambrian age, evolution, the development of vision, and body structural colors in insects and aquatic life.—*Lee Luckeydoo, Botanical Research Institute of Texas, 509 Pecan Street, Fort Worth, TX 76102-4060, U.S.A.*

Grape Man of Texas

Sherrie S. McLeRoy and Roy E. Renfro, Jr. 2004. **Grape Man of Texas: The Life of T.V. Munson.** (ISBN 1-57168-819-6, hbk.) Eakin Press, P.O. Drawer 90159, Austin, Texas 78709-0159, U.S.A. (Orders: 512-288-1771; 800-880-8642; 512-288-1813 fax; Service and Sales: sales@eakinpress.com). $39.95, 296 pp., color and b/w figures, 7" × 10".

Grape Man of Texas: The Life of T.V. Munson is the first biography written about this eminent Texas horticulturist. He became one of the leading experts in native American grape species, and his studies were instrumental in saving the European grape and wine industry from disaster in the late nineteenth century. Munson developed over 300 new grapes but is perhaps best known for his efforts in fighting the phylloxera epidemic of the late 19th century, for which he received the Chevalier du Merite Agricole and inducted into the French Legion of Honor. He was also a leader in the viniculture movement of the period for his cutting-edge work in breeding new grape and plant varieties. His articles, experiments, correspondence, speeches, exhibits, grape classifications, and numerous inventions reveal his scientific thirst for knowledge and his wide-ranging interests.

Over 100 years ago Cognac, France and Denison, Texas shared two of it's citizens with the world to solve a major destructive force—the grapevine destroyer, phylloxera. It was 1880 and the phylloxera plague was rampant in France, especially in the Charante Region where Cognac is located. The phylloxera root louse was destroying the prestigious French winegrapes and therefore, destroying the economy of France. France assigned the preeminent French scientist, Pierre Viala the task of finding a cure for the phylloxera plague. This investigation brought him to the United States and to the home of Thomas Volney Munson in Denison, Texas. The two scientists collaborated on the problem for several days in Denison and various other locations in Texas to view the native grapes of Texas in their natural habitat. The soils of the Charante, in France, and Denison are very similar and therefore should support grape species capable of growing in either location. T.V. Munson suggested that the only way to save the French vineyards was to graft the *Vitis vinifera* varieties to resistant rootstocks. Munson knew that the Texas rootstocks were resistant to phylloxera and at his suggestion, Pierre Viala agreed that it was a good plan of action. Thousands of bundles of Texas rootstocks were shipped to France where Pierre Viala and other French scientists started educating the French winegrowers on the enormous grafting tasks that lay ahead. The grafting literally continues to this day.

For his monumental contributions to France, T.V. Munson was awarded the highest award that could be given a foreign civilian, the Chevalier du Merite Agricole and was inducted into the Legion of Honor in 1888. In 1898 he was elected as a foreign corresponding member of the Societe Nationale d'Agriculture de France and as an honorary member in the Societe des Viticulteurs de France. Several statues honoring Munson have been erected in France.

Nearly 300 pages long, the *Grape Man of Texas* includes more than 100 illustrations, many never before published; the first listing compiled since Munson's death of his 300+ grape hybrids and their parentages; a list of his wild grape discoveries, several of which remain important in modern viticulture and research; and a list of all of Munson's known speeches and publications.